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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/602,429	06/24/2003	Sridhar Sadasivan	01333	9648

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Milton S. Sales
Eastman Kodak Company
343 State Street
Rochester, NY 14650-2201

EXAMINER	
CLEVELAND, MICHAEL B	
ART UNIT	PAPER NUMBER
1762	

DATE MAILED: 04/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/602,429	SADASIVAN ET AL.	
	Examiner	Art Unit	
	Michael Cleveland	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *2/14/2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-41* is/are pending in the application.

4a) Of the above claim(s) *22-35* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21 and 36-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 February 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *021405, 032305*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Claims 22-35 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 6/28/2004.

Specification/Drawings

2. The disclosure is objected to because of the following informalities: The serial numbers on p. 1 must be supplied, and the attorney docket numbers must be removed.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 36 is rejected under 35 U.S.C. 102(b) as being anticipated by Tashiro et al. (U.S. Patent 5,059,863, hereafter '863).

'863 teaches a method of producing a light emitting display comprising:

providing a substrate (1),

providing a first addressing electrode (2a) on the substrate;

controllably depositing tris-(8 hydroxyquinoline)aluminum, which Applicant identifies as an organic nanomorphic material, as a luminescent layer (4) over the first addressing electrode (Example 5), and

providing a second addressing electrode (2b) over the organic nanomorphic material.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-9, 11, 13-21, and 36-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jagannathan et al. (U.S. Patent 6,471,327, hereafter '327) in view of Miyashita et al. (U.S. Patent Application Publication 2001/0001050, hereafter '050).

Claims 1, 13, 14, 38-41: '327 teaches a method for forming a layer of an electroluminescent (EL) material (col. 4, lines 3-14) comprising the steps of:

providing a substrate (14);

controllably depositing an organic material (col. 9, lines 48-55) over the substrate in a first location and a distinct second location (to form a patterned high resolution image (col. 1, lines 19-32; Fig. 3D),

wherein the organic material becomes free of the compressed fluid solvent prior to reaching the substrate (col. 10, lines 10-30).

'327 does not explicitly teach that the EL material is deposited on a first addressing electrode on the substrate and covered with a second addressing electrode on the EL material. However, the selection of something based on its known suitability for its intended use has been held to support a *prima facie* case of obviousness. *Sinclair & Carroll Co. v. Interchemical*

Corp., 325 U.S. 327, 65 USPQ 297 (1945). See MPEP 2144.07. '327 does not teach how to make an EL device. The Examiner takes Official Notice that EL devices are typically constructed by depositing a first addressing electrode on a substrate, depositing the EL material on the first electrode, and depositing a second addressing electrode on the EL material. For instance, '050 teaches that organic EL devices may be constructed by depositing a first addressing electrode (801, 802, 803) on a substrate, depositing the EL material (806, 807, 808) on the addressing electrode and depositing a second electrode (813) on the EL material. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have constructed the EL device of '327 by depositing a first addressing electrode on a substrate, depositing its EL material on the first electrode, and depositing a second addressing electrode on the EL material with a reasonable expectation of success because '050 teaches that such is a suitable method of making an EL device.

'327 does not explicitly teach that the organic material is contained under a first condition having a first spectral peak before depositing on the first electrode and that the same material is contained under a second condition so that it has a different spectral peak before depositing it in the second location. However, the Examiner takes Official Notice 1) that color screens are very well known in the art, see, e.g., '050, [0049] and 2) that the use of a common host material with different dopants to produce the different colors is known in the art, see, e.g., [0071], [0075-0082]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have stored the same material under different conditions, such as different dopants, in order to have provided a color device.

Claims 2-7 and 19-21: The first and second conditions must have temperatures and pressures. Likewise, the evaporation must occur at a temperature and pressure.

Claim 8: The organic material may be printed in at least three distinct locations (Fig. 3D) using three distinct dye. Furthermore, a color screen comprises thousands of pixels of each color in distinct locations.

Claims 9 and 11: '050 teaches that a mask (825) may be positioned over the electrode prior to deposition (Fig. 4).

Claim 15-16, 37, 39-41: '050 also teaches that different organic EL materials may be deposited [0076-0078] to form a color EL device. Therefore, it would have been obvious to one

of ordinary skill in the art at the time the invention was made to have repeated the method of '327 to form each of the three EL layers with a reasonable expectation of success because '327 teaches that its method is suitable for depositing EL materials.

Claims 17-18: Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have mixed each material by the procedure of col. 9, lines 16-35 (i.e., varying the condition of each mixture before depositing it).

Claim 36: The material of '327 is nanomorphic (col. 10, lines 3-5).

8. Claims 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jagannathan '327 in view of Miyashita '050 as applied to claim 1 above, and further in view of Yamazaki et al. (U.S. Patent 6,420,834, hereafter '834).

'327 and '050 are discussed above, but do not explicitly teach that the organic material and substrate are oppositely charged. However, '834 teaches that the area of deposition of an organic electroluminescent material may be controlled by charging the organic material and oppositely charging the substrate to attract the material to the areas of the substrate that are so charged (col. 5, lines 20-36). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have deposited the material of '327 by charging it and oppositely charging the substrate in order to have controlled the area of deposition on the substrate.

9. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tashiro '863 as applied to claim 36 above, and further in view of Miyashita '050.

Tashiro '863 is described above, but does not explicitly teach the deposition of a second organic nanomorphic material in a distinct location. However, '050 teaches the use of color screens as discussed above, and doped host layer for producing different colors. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have deposited doped layer of tris(8-hydroxyquinoline) aluminum in other distinct locations in order to have made a color screen.

10. Claims 36 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jagannathan '327 and Tashiro '863 in view of each other.

'327 teaches deposition of an EL material, as discussed above, but does not explicitly teach depositing an organic nanomorphic material. Tashiro '863 is described above, but does not explicitly teach the deposition from a compressed fluid solvent. Taking the references as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used tris(8-hydroxyquinoline) aluminum as the particular electroluminescent material of '327 with a reasonable expectation of success because '863 teaches that it is an operative luminescent material.

11. Claims 37 and 39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jagannathan '327 and Tashiro '863 in view of each other, as applied to claim 36, and further in view of Miyashita '050 for substantially the same reasons for which it was applied regarding claim 1.

Double Patenting

12. Applicant is advised that should claim 37 be found allowable, claim 39 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Response to Arguments

13. Applicant's arguments filed 2/14/2005 have been fully considered but they are not persuasive.

Applicant argues that Jagannathan does not disclose that by varying conditions during material ejection, the reflected peaks can be altered creating multiple colors with the same material. The argument is unconvincing because no such feature is claimed. Claim 1 requires only that the organic material be stored under two different conditions with different colors. The use of two or three colors of EL materials with the same host material and different dopants (and

therefore different conditions) is known, as discussed above. Claim 15 only requires that the first and second (storage) conditions be varied and that multiple colors can be achieved. The varying of conditions for example by mixing is discussed above, and multiple color screens are well known in the art.

Applicant argues that Miyashita teaches the use of distinct materials in the different colored pixels. The argument is unconvincing because the use of a common host material with different dopants is well known in the art, as suggested by Miyashita [0071].

Applicant argues that there would be no motivation to combine the references because Miyashita uses a drastically different environment than that of Jagannathan '327. The argument is unconvincing because Jagannathan teaches the use of its system to deposit electroluminescent materials but does not teach the other details of electroluminescent device manufacturing. Miyashita is cited primarily for its teachings of EL device configuration and materials. The differences in the method of deposition of the EL layer would not have obscured these teachings to one of ordinary skill in the art.

Applicant argues that "nanomorphic" is defined differently by '327 than by Applicant. The argument is unconvincing because Applicant indicates that their definition is found over pp. 31-34 of the specification, and therefore does not provide a sufficiently specific definition to satisfy the requirements of 35 USC 112, 2nd paragraph because it does not identify the specific features that are possessed by nanomorphic materials. Accordingly, the broadest reasonable interpretation of "nanomorphic" must be used. Merriam-Webster's Collegiate Dictionary, 10th edn. defines the suffix "-morphic" as "having (such) a form". The deposited material of '327 is in the form of nanosized particles, and therefore meets the broadest reasonable interpretation of "nanomorphic".

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Cleveland whose telephone number is (571) 272-1418. The examiner can normally be reached on Monday-Thursday, 7-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael Cleveland
Primary Examiner
Art Unit 1762

4/11/2005